

# **California Interagency Working Group on Indoor Air Quality**

## **Combine Minutes**

**September 26, 2001**

**Air Resources Board Headquarters**

**1010 I Street, Sacramento**

**and**

**December 5, 2001**

**Department of Health Services Laboratory Facility**

**2151 Berkeley Way, Berkeley**

### **GENERAL ANNOUNCEMENTS**

### **SPECIAL PRESENTATION**

### **AGENCY REPORTS ON CURRENT IAQ ACTIVITIES**

California Air Resources Board / IAQ & Personal Exposure Assessment Program  
California Department of Health Service / Environmental Health Investigations Branch  
California Department of Health Service / Indoor Air Quality Section  
California Department of Health Service / Occupational Health Branch  
California Department of Industrial Relations (Cal/OSHA)  
Electric Power Research Institute (EPRI)  
Lawrence Berkeley National Laboratory / Indoor Environments Program  
Office of Environmental Health Hazard Assessment / Indoor Air Risk Assessment Group  
U.S. EPA Region IX / Indoor Environment Team

### **WORKING GROUP COMMITTEES**

Indoor Environmental Quality of Schools  
Building Design and Operations

### **FUTURE MEETINGS**

## GENERAL ANNOUNCEMENTS

USEPA Region 9 is sponsoring the training course, ***Indoor Air Quality: Asthma and Allergens***, January 22-23, 2002 at Cal State University, Fullerton. This is the only delivery of this course planned anywhere in the U.S. this year. The agenda and complete course information are available at: <http://www.utulsa.edu/iaqprogram/Fullertoncolor.pdf>

The State Legislature passed, and the Governor signed, to bills this fall addressing indoor mold contamination: Senate Bill 732 (Ortiz) and Assembly Bill 284 (Jackson). See DHS-EHIB notes below. Statute language and updates on their implementation are posted on the web at <http://www.cal-iaq.org/iaqsheetsheet.htm#Mold>.

On a light note, ***Rex Morgan MD*** (the comic strip) completed a 20-week storyline about toxic mold with characters getting sick, a flooded basement, and the heroic efforts June Morgan, physician's assistant (and wife of Dr. Morgan). A file with the comic strips can be downloaded at: [http://www.cal-iaq.org/CIWG/RexMorgan\\_MoldSeries\\_2001.pdf](http://www.cal-iaq.org/CIWG/RexMorgan_MoldSeries_2001.pdf).

Recognition has been given to a number of our CIWG-IAQ colleagues in the past few months: Peggy Jenkins (ARB) received the Governor's Employee Safety Award, and Sandra McNeel and Leon Alevantis each received a Department of Health Services' Sustained Superior Accomplishment Award (see notes in sections below). Way to go, IAQ comrades!

## SPECIAL PRESENTATIONS

The Group was very fortunate to have two excellent and knowledgeable speakers, presenting on two very diverse topics at the recent meetings. The PPT slides can be downloaded by clicking on the title below.

*September 2001*

**[Developing an Environmentally Preferable Purchasing Program for Janitorial Products Used in State Buildings](#)**

by

**Vincent Paul** ([Vincent.Paul@dgs.ca.gov](mailto:Vincent.Paul@dgs.ca.gov))

Environmental Safety and Health Operations Program (ESHOP) Manager

Department of General Service (RES-D-BPM), <http://www.resd.dgs.ca.gov/>

*December 2001*

**[Building Science and IAQ issues related to Chemical and BioAgent Events and Preparedness](#)**

by

**Rich Sextro** ([RGSextro@lbl.gov](mailto:RGSextro@lbl.gov))

Staff Scientist, LBNL Indoor Environment Department, <http://eetd.lbl.gov/IE.html>

## AGENCY REPORTS ON CURRENT IAQ ACTIVITIES

### California Air Resources Board / Indoor Air Quality & Personal Exposure Assessment Program

<http://www.arb.ca.gov/research/indoor/indoor.htm>

-- Peggy Jenkins ([mjenkins@arb.ca.gov](mailto:mjenkins@arb.ca.gov))

#### Awards.

In August, Peggy Jenkins received the prestigious Governor's Employee Safety Award. The individual awards are presented to people who make an outstanding contribution to safety or health resulting in the prevention of workplace injuries, accidents or illnesses, or who responds to a hazardous or life threatening event. Her award commendation states:



*Peggy Jenkins, Manager of the Indoor Exposure Assessment Section, dedicated her personal time and applied her expertise to the efforts that currently assure healthy indoor air quality for employees in the new Cal/EPA building. She was involved in almost every aspect of these efforts as she not only helped develop the Indoor Air Quality Monitoring Plan, but also acted as advisor to the building staff. Her expert advice helped implement many of the tasks associated with the Plan. When mold was discovered during the construction, she provided advice, leadership, and hands-on assistance in*

*taking samples, interpreting the results, and notifying property management of the proper procedures to eliminate the problem. Ms. Jenkins contributed many of her nights and weekends to the health and safety of those who occupy and visit the new building. The knowledge and procedures she used to ensure the highest indoor air quality possible are considered to be some of the most advanced and will be incorporated into the design of future state buildings and construction projects.*

**California Portable Classrooms Study (PCS).** Data entry for Phase I, the mail survey sent to 1000 schools in spring of 2001, was completed, and plans for analysis of the data are being finalized with Research Triangle Institute (RTI), the contractor for the study. RTI plans to submit their draft Phase I report in December. Phase II, the field portion of the study, began with a pilot study in August and is making good progress. Fifty-seven schools have been successfully recruited, and about 35 schools should be visited and monitored by mid-December. The remaining 35 or so schools will be studied in the first quarter of 2002. ARB and RTI are finalizing the list of pesticides, metals, PAHs, and PCBs to be analyzed in the dust samples. Contact: Tom Phillips ([tphillip@arb.ca.gov](mailto:tphillip@arb.ca.gov)) or Tracy Hysong ([thysong@arb.ca.gov](mailto:thysong@arb.ca.gov)).

**Formaldehyde Controls for Composite Wood Products.** ARB is developing an Airborne Toxics Control Measure (ATCM) for formaldehyde emissions from composite wood products. Staff of the Indoor Exposure Assessment Section are evaluating emissions data, indoor concentration data, and near source data gathered through unique studies sponsored by ARB. They have calculated indoor concentrations for a variety of public buildings, offices, schools, and homes. Two workshops have been held to date, and others are planned. ARB is surveying the industry to learn about the various composite wood products and resins used in their manufacture. The industry implemented voluntary practices in 1998 to reduce emissions from selected composite wood products; however, greater emission reductions are needed for all products to adequately protect the health of Californians. ARB plans to hold a public hearing on its findings in 2002. Contact: Peggy Jenkins ([mjenkins@arb.ca.gov](mailto:mjenkins@arb.ca.gov)) or Dorothy Shimer ([dshimer@arb.ca.gov](mailto:dshimer@arb.ca.gov)).

**SB25 Indoor and Personal Monitoring Project Underway.** ARB staff and the principal investigator, Dr. Steve Colome from UCLA, met with staff from the Los Angeles Unified School District (LAUSD) Environmental Health and Safety Branch to discuss the indoor and personal monitoring component of the SB25 project. ARB's SB25 monitoring project is intended to provide data that can be used to assess the adequacy of the current ambient monitoring network in reflecting Californians' actual exposures to air pollutants. Staff also met with principals at Hollenbeck Middle School in Boyle Heights and Wilmington Park Elementary School in Wilmington, and visited classrooms that will be used for indoor monitoring.

Dr. Colome will measure VOCs, aldehydes, particulate matter, and other pollutants inside three classrooms at each school, on school grounds outside the classrooms, and in a few residences. A small number of students will wear personal VOC monitors and complete a health survey about any asthma or allergies they may experience. Additional funding from EPA will be sought to analyze particle samples for metals, assess mold/moisture conditions, and increase the educational outreach activities associated with the study. The pilot study was conducted at Hollenbeck Middle School in November. The main field effort currently is expected to begin in December. Contact: Dorothy Shimer ([dshimer@arb.ca.gov](mailto:dshimer@arb.ca.gov)), or Peggy Jenkins ([mjenkins@arb.ca.gov](mailto:mjenkins@arb.ca.gov)).

**FACES (Fresno Asthmatic Children's Environment Study).** Preparation for the neighborhood monitoring in the FACES study is progressing. The school sites for the two mobile trailers in Fresno have been identified. A comparison of samplers on the two mobile trailers and the U.S. EPA Supersite in Fresno is scheduled to begin in December 2001. The in-home monitoring protocols are being developed and a pilot study for the "home intensive" portion of the study is expected to begin in December as well. The start of the full scale in-home monitoring (100 home visits planned over 14 months) and monitoring at both trailers (also to continue at several locations around Fresno for 14 months) is scheduled to begin in January 2002. Contact: Jeff Yanosky ([jyanosky@arb.ca.gov](mailto:jyanosky@arb.ca.gov)), or Tracy Hysong ([thyson@arb.ca.gov](mailto:thyson@arb.ca.gov)).

**Harvard Residential/Personal PM Studies.** The ARB-USEPA study of particle exposure among COPD patients in the Los Angeles area is in the report-writing phase. The draft final report is expected to be considered by the ARB's Research Screening Committee in spring 2002, and

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should be finalized by next June. Harvard is currently in the field conducting a complementary ARB-USEPA study of residential and personal exposures of healthy subjects, also in Los Angeles. Field work should be completed by March 2002. Contact: Tom Phillips ([tphillip@arb.ca.gov](mailto:tphillip@arb.ca.gov)).

**Fact Sheet on Reducing Exposure to Particulate Pollutants.** Indoor Program staff was asked to develop a “one-page” fact sheet on ways people can reduce their exposures to particulate pollutants from both indoor and outdoor sources. The fact sheet will be distributed at workshops to be held in December on the ARB-OEHHA proposed ambient PM standard revisions, and at future related workshops. Translation of the fact sheet into Spanish is being planned, as well. The draft is temporarily posted on-line ([click here](#)); comments and suggestions regarding the fact sheet are welcome. Contact: Peggy Jenkins ([mjenkins@arb.ca.gov](mailto:mjenkins@arb.ca.gov)).

### **California Department of Health Service / Environmental Health Investigations Branch** -- Sandra McNeel ([SMcNeel@dhs.ca.gov](mailto:SMcNeel@dhs.ca.gov)) <http://www.dhs.ca.gov/ps/deodc/ehib/>

**Awards.** Sandy McNeel received the Sustained Superior Accomplishment Award from the California Department of Health Services in recognition of her outstanding work with local health officials, other state agencies, and the public regarding indoor mold contamination.

**Legislative Bill Analyses.** EHIB staff analyzed two bills during the last quarter that involve indoor mold. Both of these bills passed the Assembly and Senate, were enrolled, and signed by the Governor. The statute language and updates on their implementation is posted on the web at <http://www.cal-iaq.org/iaqsheets.htm#Mold>

- SB 732 (Ortiz) Toxic Mold Protection Act of 2001: requires DHS to evaluate the feasibility of permissible exposure limits for indoor molds; convene a stakeholder task force and in consultation with them identify and adopt practical standards to assess the health threat posed by indoor molds, develop guidelines for recognition of mold and water damage, develop additional guidelines for mold remediation, and consider the need for standards for professionals engaged in mold assessment or remediation. The Department is also charged to increase mold-related resources available to the public through the DHS website, and to make these available in languages other than English (contact Debra Gilliss, [dgilliss@dhs.ca.gov](mailto:dgilliss@dhs.ca.gov))
- AB 284 (Jackson): This bill charges the California Research Bureau, the research branch of the State Library, in consultation with the California Department of Health Services, to perform a study of indoor fungal contamination. An expert panel will be convened to review the current literature, recommend topics to be included and examine issues addressed in the study (contact Pamela Davis, [pdavis@library.ca.gov](mailto:pdavis@library.ca.gov))

**Biological and Chemical Terrorism Preparedness.** EHIB staff involved with indoor air quality issues have redirected a significant portion of their efforts to improving DHS and local health department capabilities regarding response to biological and chemical terrorism agents. In conjunction with DHS staff in the Communicable Disease Control Division, EHIB personnel are developing factsheets, surveillance techniques and exposure assessment protocols for some of these

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agents. EHIB has developed draft factsheets on ricin and sulfur mustard – a toxin and chemical, respectively, that have been identified as potentially likely agents that might be used in terrorist attacks. These documents are currently undergoing internal review. EHIB staff are also assisting with environmental assessment issues involving both biological and chemical agents. EHIB also has primary responsibility for developing epidemiological surveillance tools for chemical agents that might be used in a terrorism event. (Contact Sandy McNeel, [smcneel@dhs.ca.gov](mailto:smcneel@dhs.ca.gov) or Debra Gilliss, [dgilliss@dhs.ca.gov](mailto:dgilliss@dhs.ca.gov))

**New information sheet for schools.** With the kind assistance of the California Department of Education a new DHS factsheet, “Mold in My School: What do I do?”, was distributed to all school districts in California during late September. This fact sheet describes potential health effects that may be experienced by school building occupants when water intrusion or mold growth is present. While making some recommendations about remediation, it also emphasizes methods to prevent mold growth and water damage in schools. This document will be available on DHS websites soon ([www.cal-iaq.org](http://www.cal-iaq.org) and [www.ehib.org](http://www.ehib.org)).

**Presentations.** Sandy McNeel and EHIB staff have given numerous talks on health effects of indoor molds, remediation and prevention, as well as recent legislation (SB 732 (Ortiz) and AB 284 (Jackson)) and its implementation:

- Mealey’s Mold Litigation Conference, Marina del Rey, June 25-26.
- California Conference of Directors of Environmental Health, September 20.
- California Environmental Health Association – South, October 12.
- California Association of Code Enforcement, October 24.

Sandy also participated in a televised workshop organized by the Sacramento Human Right/Fair Housing Commission, discussing updated information on health effects associated with indoor molds. She was also a panel member for a National Public Radio program (“Forum”) discussing indoor molds via KQED, San Francisco, on August 24.

## **California Department of Health Service / Indoor Air Quality Section**

-- Jed Waldman ([JWaldman@dhs.ca.gov](mailto:JWaldman@dhs.ca.gov))

<http://www.cal-iaq.org>

**Awards.** Leon Alevantis received the Sustained Superior Accomplishment Award from the California Department of Health Services, in recognition of his tireless work toward the goal of healthful indoor air quality in commercial buildings.

**BASE Study.** Further analyses on bacteria and allergens are being planned for the finalized data set, pending additional funding from US EPA. Results will be presented in the Indoor Air 2002 conference in Monterey, CA. Contact Janet Macher ([jmacher@dhs.ca.gov](mailto:jmacher@dhs.ca.gov)) or Feng C. Tsai ([ftsai@oehha.ca.gov](mailto:ftsai@oehha.ca.gov)).

**Environmental Tobacco Smoke (ETS) Study.** Chamber experiments at LBNL were completed. A number of experiments were conducted to investigate the effects of open plenum between the



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smoking and adjoining non-smoking rooms. The results of the door opening experiments prompted us to plan some experiments with sliding door and no door at all – not part of our original proposal.

We have completed our survey of California local tobacco control jurisdictions and their restrictions on smoking rooms. We are continuing to analyze statewide tobacco survey data, and we are working with the UCSD on the 1999 CTS 2000 and 2001 CATS data. Field studies were conducted in November in one smoking room in southern California. The Annual Progress Report was submitted to TRDRP, the funding organization, in June., We made two poster presentations at the Annual Investigator Meeting in Los Angeles on December 7. Contact: Leon Alevantis, [Lalevant@dhs.ca.gov](mailto:Lalevant@dhs.ca.gov).

### **Portable Classroom Study.** [See related note under ARB.](#)

**Sierra Radon Survey.** Results of radon measurements for a survey of elementary schools in the 14 Sierra counties have been quality checked and analyzed. For approximately 500 classrooms in 27 schools, the concentrations ranged from below the limit of detection (0.1 pCi/L) to 10.1 pCi/L, with an average concentration of 1.2 pCi/L. There were 11 monitors in 3 schools with radon concentrations exceeding 4 pCi/L. Of the radon households survey in the same area, results of 756 radon measurements from 648 households were quality checked and analyzed. The radon concentrations of non-basement living rooms varied from under the limit of detection to 12.1 pCi/L, with an average value of 1.36 pCi/L. The concentrations measured in 39 basements ranged from 0.7 to 15.9 pCi/L, with an average concentration of 3.05 pCi/L. A total of 23 rooms in 22 households had radon concentrations exceeding 4 pCi/L. Further multivariate analysis will be carried out to identify risk factors related with elevated radon concentrations. Contact: Kai-Shen Liu, [KLiu@dhs.ca.gov](mailto:KLiu@dhs.ca.gov).

**Emissions of Building Materials With High-Recycled Contents.** The CIWMB funded a study to DHS to measure emissions of building materials with high-recycled contents and compare them to their virgin counterparts. A full time chemist has been hired for this project, and sampling and analytical SOPs have been developed for VOCs (GC/MS) as well as for formaldehyde. Our large chamber has been outfitted with charcoal filters to remove VOCs, and background VOC levels have been determined. The large chamber is used to pre-condition the building materials as per Section 1350. The list of materials to be tested has been finalized in a series of advisory committee meetings this fall. Chamber testing began in late October, and the analyses of the samples for the classroom construction portion of the study will be completed in February 2002. The deliverables for Task 1 and 2 of the study have been delivered to the CIWMB. Contact: Leon Alevantis, [Lalevant@dhs.ca.gov](mailto:Lalevant@dhs.ca.gov).

### **Conference Presentations.**

- Tobacco-Related Disease Research Program, 6<sup>th</sup> Annual Investigator Meeting, December 7, 2001, Los Angeles California:
  - *Evaluation of Smoking Room Performance: Laboratory Experiments*, Fisk, W.J.; Wagner, J.; Sullivan, D; Faulkner, D.; Alevantis, L.; Gundel, L.; and Waldman, J.

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- *Evaluation of Smoking Room Performance: Survey Results*, Alevantis, L.; Liu, K-S.; Waldman, J.; Lucas, L.; Tsai, F.; and Flessel, P.
- American Association for Aerosol Research Annual Meeting (Oct 15-19):
  - Platform presentation --- *Prevalence of Culturable Airborne Fungi in 100 U.S. Office Buildings in the Building Assessment Survey and Evaluation (BASE) Study*, Janet M. Macher, Sc.D., Feng C. Tsai, Ph.D., Laureen E. Burton, Kai-Shen Liu, Ph.D., Jed M. Waldman, Ph.D.
- American Society for Heating, Refrigerating and Air-Conditioning Engineers, Moisture, Microbes, and Health Effects: Indoor Air Quality and Moisture in Buildings (Nov 5-7)
  - Same presentation as above, Feng C. Tsai, Ph.D., Janet M. Macher, Sc.D., Laureen E. Burton, Kai-Shen Liu, Ph.D., Jed M. Waldman, Ph.D.

### **Committee Work**

- The NAS Committee on Air Quality in Cabins of Commercial Air Craft (Janet Macher is a member) released its report, *The Airliner Cabin Environment and the Health of Passengers and Crew*, which can be viewed at the NAS web site: <http://www.nap.edu/catalog/10238.html>. An article appeared in the Los Angeles Times, <http://www.latimes.com/templates/misc/printstory.jsp?slug=la%2D000097352dec07>.
- Leon Alevantis attended ASHRAE 62 committee meeting on September 7-8, 2001. Standard 62-1999 was re-issued in October 2001 and incorporates a number of previously-approved addenda. Leon is the lead person on addressing comments received on Addendum ad. When passed, this proposed addendum will replace Appendix C of 62-1999.
- Jed Waldman, as member of the U.S. EPA Science Advisory Board's Integrated Human Exposure Committee, contributed to a review of an EPA draft document on ranking air toxics indoors.

### **Publications**

- Janet Macher has written a chapter on "Sampling Biological Aerosols" with Harriet Burge in *Air Sampling Instruments for Evaluation of Atmospheric Contaminants*, 9<sup>th</sup> edition, newly published by ACGIH Air Sampling Instruments Committee.
- Leon Alevantis was invited to submit an article called, *Sustainability in California's State Building Construction: Present and Future Trends*, which will be published in the ASHRAE periodical *IAQ Applications*, Spring 2002.



## **California Department of Health Service / Occupational Health Branch**

-- Jim Cone ([Jcone@ohb.org](mailto:Jcone@ohb.org)), and Liz Katz ([Ekatz@dhs.ca.gov](mailto:Ekatz@dhs.ca.gov)) <http://www.ohb.gov>

**Molds Presentation to Real Estate Inspectors.** The HESIS Industrial Hygienist spoke jointly with Sandra McNeel, DVM, of the Environmental Health Investigations Branch, at a meeting of the California Real Estate Inspectors Association (Central Valley Chapter). The meeting was heavily attended. Most inspectors reported that home buyers expected them to assess mold hazards. They were also concerned about their own health risk during inspections. The meeting was held in Sacramento on July 17.

**Hexane Use in Vehicle Repair: Occupational and Environmental Aspects.** HESIS issued a Health Hazard Advisory about n-hexane's nerve toxicity. The California Department of Toxic Substances Control is printing and distributing this 4-page publication jointly with HESIS. The advisory contains information about water-based alternative cleaners, health hazards, regulations, and recognizing products that contain n-hexane as an ingredient. Copies can be requested by calling (510) 622-4238 or downloaded at <http://www.dhs.ca.gov/ohb/hesis/nhexane.pdf>.

## **California Department of Industrial Relations (Cal/OSHA)**

– Bob Nakamura ([bnakamura@hq.dir.ca.gov](mailto:bnakamura@hq.dir.ca.gov)) <http://www.dir.ca.gov/dosh/>

**Airborne Contaminants: 8CCR 5155.** The Division has begun to review more Threshold Limit Value changes proposed by the ACGIH. The first meeting of the advisory committee was on May 4, 2001. The next meeting will be on January 11, 2001 in Oakland at the Elihu Harris State Building headquarters. The Division coordinator is Bruce Wallace (415-703-5165).

**Laboratory Fume Hoods: 8CCR 5154.1.** The Division has convened five advisory committee meetings to evaluate two different petitions requesting the Standards Board to reduce ventilation rate requirements and establish a performance standard in place of the existing regulation that relies on face velocity measurements. The last meeting was on August 8<sup>th</sup> in San Francisco. Another draft proposal was presented and discussed by the attendees but no final proposal was adopted. The Division coordinator is Bruce Wallace (415-703-5165).

**Heat Stress Standard.** The Division has held three advisory committee meetings to review the need and issues involved in proposing a standard for heat stress. The last meeting was on October 2, 2001 in Oakland. A draft proposal was reviewed at the meeting, and revisions will be forthcoming based on the outcome of the meeting. For more information, contact Bob Barish at 415-703-5100.

**Revision of the Sanitation standard, GISO 3362.** HESIS proposed language to the Division to change the sanitation standard to specifically identify mold as an unsanitary condition that must be corrected by the employer. This was proposed as a clarification to the existing standard to the Cal/OSHA Standards Board on September 20<sup>th</sup>. In response to the comments on the proposal that were received, the Board asked the Division to have an advisory meeting to consider more information about the proposal. This

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advisory meeting was held on Tuesday, November 13<sup>th</sup> at 10 AM in the Oakland State Building. The proposal considered at the meeting was as follows:

Title 8, Calif. Code of Regulations; General Industry Safety Orders: Article 9 Sanitation §3362. General Requirements.

*(f) Every enclosed workplace and personal service room shall be equipped and maintained, insofar as is practicable, to prevent the entrance or harborage of insects, rodents or other vermin. An effective program of extermination and control shall be instituted whenever their presence is detected. When exterior water intrusion, leakage from interior water sources, or other uncontrolled accumulation of water results in mold infestations on interior building components or furnishings, the water intrusion, leakage, or accumulation shall be corrected, the mold shall be cleaned or removed, and water damaged components shall be repaired or replaced as necessary to prevent the regrowth of mold.*

Once the proposal reaches its final form and goes to notice, it will be viewable at the Standards Board's web site at: <http://www.dir.ca.gov/OSHSB/oshsb.html>. For questions, contact Bob Nakamura at 415-703-5160.

Revision of Record Keeping Requirements. In keeping with a Federal OSHA mandate, the record keeping requirements for injuries and illnesses in California workplaces are being revised for implementation in early 2002. This includes replacing the Log 200 with a Log 300 form and revising recording criteria, access requirements, and new recording requirements. These changes affect most of the employers in California. These changes can be viewed on the Division's website at: <http://www.dir.ca.gov/DOSH/DoshReg/EmpRecPropReg.html>

### Electric Power Research Institute (EPRI)

-- Annette Rohr ([arohr@epri.com](mailto:arohr@epri.com))

<http://epri.com/>

Annette Rohr recently joined EPRI's Air Quality, Health, and Risk Assessment Group from the Harvard School of Public Health, where she investigated indoor particle formation through terpene/ozone reactions and assessed a variety of inhalation toxicology endpoints related to these reaction mixtures. Her phone number is (650) 855-2765).

EPRI's Air Quality Group is currently involved in multiple exposure assessment, epidemiological, and toxicological studies related to outdoor particulate matter (PM) and gaseous pollutants. To complement this ambient air-focused work, as well as to allow cross-disciplinary research with other energy-related disciplines, EPRI has a strong desire to initiate IAQ-related research. Many potential research areas exist; however, the following three broad areas have been identified as being of particular interest to the energy industry (the first is one in which EPRI is most active):

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- Continued evaluation of the relationship between indoor, outdoor, and personal pollutant exposures and the relative toxicities of indoor and outdoor PM;
- Technologies related to improving the built environment, including building design and pollutant control; and
- Integrated consideration of IAQ in the context of energy efficiency and sustainable development.

### Lawrence Berkeley National Laboratory / Indoor Environments Program

-- Mike Apte ([MGAPte@lbl.gov](mailto:MGAPte@lbl.gov))

<http://eetd.lbl.gov/iep/iep.html>

Mike Apte gave an update of the PIER-funded study, *Indoor Environmental Quality and Energy Efficiency in Relocatable Classrooms*. This study is Element 6 of the California Energy Commission (CEC) funded High Performance Commercial Buildings Systems Program. This project focuses on developing and testing a concept for high-performance relocatable classrooms (RCs). RCs, otherwise known as "School Portables," or "Modular Classrooms," are very common in California. RCs provide school districts with quick and convenient means of adding or replacing classrooms. RCs can be moved around, reducing unnecessary classroom construction. In this project, they evaluate the benefits of a novel building ventilation system and also of selecting construction materials that emit fewer indoor pollutants. Project updates can be found on-line at [http://eetd.lbl.gov/IED/zmnthrpt/ied01\\_2d1\\_iise.htm](http://eetd.lbl.gov/IED/zmnthrpt/ied01_2d1_iise.htm).

The IED is involved in a wide array of other research projects relating to IAQ. Project information is posted on-line at <http://eetd.lbl.gov/IED/zmnthrpt/ied01.htm>.

### Office of Environmental Health Hazard Assessment / Indoor Air Risk Assessment Group

-- Richard Lam ([RLam@oehha.ca.gov](mailto:RLam@oehha.ca.gov))

<http://www.oehha.org/>

**Senate Bill 25.** The statute (known as the Children's Environmental Protection Act) required by July 1, 2001 for OEHHA to develop a list of up to five chemicals identified as Toxic Air Contaminants that may cause infants and children to be especially susceptible to illness. In October, OEHHA released the document, *Prioritization of Toxic Air Contaminants - Children's Environmental Health Protection Act -- Final Report*, available on-line at [http://www.oehha.org/air/toxic\\_contaminants/pdf\\_zip/SB25%20TAC%20prioritization.pdf](http://www.oehha.org/air/toxic_contaminants/pdf_zip/SB25%20TAC%20prioritization.pdf). Cal/EPA's Scientific Review Panel on Toxic Contaminants supported the selection of the five chemicals: acrolein; diesel exhaust; polychlorinated dioxins, furans, and biphenyls; lead; and polycyclic organic matter (POM). The document includes description of the prioritization process and summaries for chemicals considered priority candidates for the list (Tier I and II). The OEHHA staff report, *Adequacy of California Ambient Air Quality Standards: Children's Environmental Health Protection Act*, is also available on-line at <http://www.oehha.org/air/pdf/sb25.pdf>

**East Bay Children's Respiratory Health Study.** This is a cross-sectional study of school-aged children that examines the relationship between respiratory health and exposure to traffic-related air pollutants. Ten schools in a Northern California area based on their proximity to major roadways were selected. Approximately 1600 third- and fourth-graders participated. The child's respiratory health and his/her home environment will be assessed through parental responses (questionnaire). At each school, measurements were made of average concentrations of indoor and outdoor pollutants such as PM2.5, PM10, nitrogen oxides, ozone, CO, and VOCs (methylcyclopentane; 2,2,4-triethylpentane; benzene; m,p-xylene; o-xylene; undecane; dodecane; toluene; ethylbenzene; 3-ethyltoluene). LBNL staff have submitted their interim report, *Multi-month monitoring of air pollutant concentrations at ten east San Francisco Bay elementary schools: Spring 2001*. Monitoring and health data received are currently being analyzed. We are recruiting 30 families from three schools who responded to the health questionnaires. NO<sub>x</sub> (outdoor) will be monitored to validate whether the school their children attends is a good proxy to residential exposure to traffic related pollutants. Contact person: Janice Kim ([Jkim@oehha.ca.gov](mailto:Jkim@oehha.ca.gov)).

In a separate, but related study, OEHHA is collecting and studying state-wide GIS and statistical data on the proximity of schools near major roads. Contact person: Janice Kim ([Jkim@oehha.ca.gov](mailto:Jkim@oehha.ca.gov)).

**Sustainable/Green Building Taskforce.** As a member of the taskforce, OEHHA continues to work with other members of the group on various sustainable building documents. OEHHA is providing technical input to other agencies on building material emissions of VOCs, use of janitorial and cleaning products, and material emission testing in portable classrooms. See committee for more details.

**Environmental Protection Indicators for California (EPIC).** The Cal/EPA has delegated responsibility to OEHHA for developing environmental indicators which will enable Cal/EPA to refine goals, efficiently allocate resources, and promote greater accountability in the State's environmental programs. A final draft of the document will be available soon. An account of the program is available at: <http://www.oehha.org/multimedia/epic/index.html>

**Proposition 65.** The latest list of chemicals regulated under Proposition 65 is available at: [http://www.oehha.ca.gov/prop65/prop65\\_list/111601LSTa.html](http://www.oehha.ca.gov/prop65/prop65_list/111601LSTa.html). OEHHA has issued a notice of intent to list naphthalene as a carcinogen under Prop 65. Naphthalene is found in indoor environments as it is used in some moth repellants and toilet bowl deodorants: [http://www.oehha.ca.gov/prop65/CRNR\\_notices/admin\\_listing/intent\\_to\\_list/noil19b3.html](http://www.oehha.ca.gov/prop65/CRNR_notices/admin_listing/intent_to_list/noil19b3.html). Cyclohexanol has been identified by the State as a chemical to cause reproductive toxicity. Cyclohexanol is used in the production of nylon, lacquers, paints, varnishes, degreasers, plastics and plasticizers, soaps and detergents, textiles, and insecticides. These products are used in indoor environments. A draft hazard identification document for cyclohexanol is available at: [http://www.oehha.ca.gov/prop65/hazard\\_ident/DARTHID1052001.html](http://www.oehha.ca.gov/prop65/hazard_ident/DARTHID1052001.html).

Senate Bill 471 (Sher) was signed into law by Governor Davis in October 2001 and will add new

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statutory language to Proposition 65. The basic intent of the bill is to make changes to the enforcement of Prop 65 by addressing abusive actions brought by private persons containing little or no supporting evidence. It bars such actions from proceeding, or shifts the burden of proof under the statute. The new language will take effect on January 1, 2002 (see <http://oehha.ca.gov/prop65/law/p65.html>).

**U.S. EPA Region IX / Indoor Environment Team** <http://www.epa.gov/iaq/>

-- Barbara Spark ([spark.barbara@epamail.epa.gov](mailto:spark.barbara@epamail.epa.gov))

**New phone numbers.** In November 2001, the phone system at the EPA Region 9 offices changed (e-mail addresses are unchanged). New numbers for the IAQ group are Barbara (415) 947-4189; Shelly (415) 947-4193; and Louise (415) 947-4192; Mike Bandrowski (415) 947-4195 Fax: (415) 947-3583 A new integrated public information center is being developed for the regional office, but has not yet have an operating central phone number.

**IAQ: Asthma and Allergens course.** We will be repeating the course successfully presented in Oakland last January at CSU Fullerton on January 22-23, 2002. As interest in both mold and asthma is very great, and we've made no secret about the absence of funding for future presentations, registration is proceeding at a very fast pace; the course may "sell out" early. New co-sponsors include the California Thoracic Society and the California Apartment Association. We expect attendance to represent the widest array of stakeholders in the history of our program, with the public health and medical sectors unusually well represented. The course brochure can be viewed at: <http://www.utulsa.edu/iaqprogram>. Please note that while scholarship funds still remain for Orange County applicants, they are extremely limited for the rest of the state.

**Mold Remediation guidance document.** The first printing of 10,000 copies has been distributed, and a new printing is underway. The web-based versions, including a downloadable PDF file, remain available at <http://www.epa.gov/iaq/molds/index.html>.

**I-BEAM software launched.** EPA has created IAQ Building Education and Analysis Model (I-BEAM), an interactive software program that integrates IAQ, energy efficiency and building economics into a unique building management tool. The software can be downloaded from web at [http://www.epa.gov/iaq/largebldgs/ibeam\\_page.htm](http://www.epa.gov/iaq/largebldgs/ibeam_page.htm). The Software CD-ROM can be requested from the IAQ INFO Clearinghouse at 1-800-431-4318 or via e-mail at [iaqinfo@aol.com](mailto:iaqinfo@aol.com).

**IAQ Tools for NEW Schools.** The HQ Indoor Environments Division is developing a web document on new school construction for IAQ. Those wishing to participate in external review should contact Shelly Rosenblum ASAP at [rosenblum.shelly@epa.gov](mailto:rosenblum.shelly@epa.gov).

**CASBO and IAQ Tools for Schools.** Barbara Spark and Shelly Rosenblum met with the Executive Director of the California Association of School Business Officials (CASBO) for to

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develop and discuss the launching of a formal, active partnership in support of the IAQ Tools for Schools program. Shelly had previously co-written an article on the Saugus USD situation for the CASBO quarterly "Journal," and Barbara contributed a short piece on "Asthma and Schools: the IAQ Connection" in the November 19 CASBO "Finder."

**SFUSD and IAQ Tools for Schools.** The San Francisco Unified School District's IAQ Policy Implementation Committee received an EPA Region IX Environmental Award for their hard work in improving the environmental conditions within San Francisco Schools by piloting the USEPA "Tools for Schools" program in 15 schools. This Committee consists of representatives from the Teachers Union, PTA, School Health Programs, SF Department of Health, school facilities management and USEPA. The committee has been struggling to implement the District's IAQ Policy with no additional resources.

**Visalia USD award.** Shelly Rosenblum traveled to Visalia to officially present the School Board of the Visalia Unified School District with the Tools for Schools "Excellence Award" which their staff received at the National Tools for Schools Symposium in Washington, D.C. on August 9th. The press release can be viewed at

<http://yosemite.epa.gov/opa/admpress.nsf/b1ab9f485b098972852562e7004dc686/8fcae907edac4ea485256aa800497a2c?OpenDocument>.

**Asthma activities.** Barbara Spark participated in an asthma discussion group meeting convened by The California Endowment in October to advise it on its new three-year grant program for local coalition activities on asthma triggers and school-aged children. Applications were due Dec. 12; awards will be made on a very fast track.

**IAQ Tools for Schools, misc.** Shelly Rosenblum continues to travel around the state providing IAQ TfS training and presentations at conferences. Most recently, he traveled to Los Angeles and Saugus to provide IAQ Tools for Schools Training to the LA County Office of Education (LACOE) and the Saugus Union School District. The training in Saugus was for this year's new IAQ Coordinators at each of the schools in Saugus. Saugus is in the 3rd year of full implementation of the program and has been given an EPA National Award for Excellence for fully implementing the program. LAUSD is in the beginning stages of implementation, and has an IAQ advisory committee which meets monthly under the leadership of E H & S Director Angelo Bellomo.

**Secondhand Smoke:** Christine Todd Whitman helped EPA launch the *Take the Smoke-Free Home Pledge* campaign to encourage parents/caregivers to make their homes smoke free. This campaign will help educate the public on the health effects of secondhand smoke and also reduce children's exposure to ETS. This is especially important to children who have asthma.



## WORKING GROUP COMMITTEES

### Indoor Environmental Quality of Schools

-- Jed Waldman ([JWaldman@dhs.ca.gov](mailto:JWaldman@dhs.ca.gov))

**Informal Group on IEQ in School Studies.** The Group met month over the summer for focused discussions on individual topics, including assessments of HVAC system performance and maintenance in portable classrooms, and questionnaires used in environmental health studies. At its last meeting in September, the Group held an open forum to discuss study progress of the different groups.

**Collaborative for High Performance Schools.** The CHPS manual and related documents are available at the web site: <http://www.chps.net/>.

### Building Design and Operations

-- Leon Alevantis ([LAlevantis@dhs.ca.gov](mailto:LAlevantis@dhs.ca.gov))

**Capitol Area East End Complex.** The Green Team worked with the Clark/Gruen Team in the development of their commissioning plan. The Green Team also is participating in regularly scheduled meetings with the Hensel Phelps team in the implementation of their commissioning plan. The Sustainable Building Task Force has prepared a first draft for IAQ sampling at the East End. The most recent quarterly report to the Joint Rules Committee can be found at: <http://www.legi.dgs.ca.gov/reports2001/EastEndReportOct2001.pdf>

**Sustainable Building TaskForce.** Reference Specifications: The revised version of *Section 1350 Special Environmental Requirements* for building materials is available for public review at [www.eley.com](http://www.eley.com). The same Section will be included in the revised version of the CHPS Manual. The report required by Executive Order D-16-00 entitled *Building Better Buildings: A Blueprint for Sustainable State Facilities* will be released during the East End's Topping Out Ceremony in early December 2001.

**Procurement Task Force.** The Task Force is still working on the draft Executive Order. A subcommittee has been formed to develop a specification for carpeting. An approach similar to the office furniture specification will be used. The Task Force is also in the process of identifying other commodities that can incorporate sustainable specifications.

## FUTURE MEETINGS

Upcoming meetings of the CIWG-IAQ are scheduled as follows:

- March 13, 2002, CalEPA Building, 10<sup>th</sup> & I St., Sacramento
- June 12, 2002, Department of Health Services, 2151 Berkeley Way, Berkeley
- September 11, 2002, CalEPA Building, 10<sup>th</sup> & I St., Sacramento
- December 11, 2002, Department of Health Services, 2151 Berkeley Way, Berkeley